

PRACTICAL THOUGHTS

O N T H E

PREVENTION AND CURE

O F T H E

S C U R V Y.

Especially in the BRITISH NAVY.

BY WILLIAM JERVEY. M. D.

Pectore fido,
Nusquam abero, longisque sequar tua carbasa votis.

STATIUS.

Οἷσι δὲ γετο παρεσκευασται καὶ διέγινωσται, ὅτι εἶδεν ὁ Φελος
εἶστιν, ὅτε χρημάτων, ὅτε σωματος, ὅτε τῶν ἀλλῶν εἰ-
δενος, ἄτερ τῆς ὑγίειας, πρὸς τὰς εἶσι μοι διαίτα ἐξευρη-
μενη. Hippocrat. de Diæta. lib. iii.

L O N D O N :

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T O

The Right Honourable the LORDS COM-
MISSIONERS for executing the Office
of LORD HIGH ADMIRAL,

The Right Honourable the Principal
OFFICERS and COMMISSIONERS of
his MAJESTY'S NAVY,

The COMMISSIONERS of the VICTUALLING,

The COMMISSIONERS of the SICK and HURT,

The OFFICERS in general of his MAJESTY'S
FORCES,

The following Observations

are with Respect

Inscribed by the

AUTHOR.

P R E F A C E.

SO many learned and ingenious men having treated on this important subject, a disease to which so many thousands of our seamen, (the garrisons of our floating bulwarks, the safeguards of our happy islands, and sources of our wealth) fall yearly victims, particularly in war time, it may seem either ostentatious, or unnecessary, at present, to offer any thing on that subject; especially as Dr. Lind, with so great industry, has given us a synopsis of the different authors who have already wrote on it. But as amongst so many opinions, the practitioner is at a loss which to adopt, and indeed most of them, from the impossibility

ii P R E F A C E.

bility of procuring the materials at sea, become there almost absolutely impracticable, I have therefore insisted more fully on the diet and prevention, and endeavoured to shew how that may most easily be effected, and, when the disease is advanced, what treatment is most likely to check its progress, so far as their situation will admit, in order to attempt pointing out the establishing a rational practice at sea, where the remedying this disease is attended with the greatest difficulties ; and although we now enjoy profound peace, which I hope will long happily continue ; yet as unforeseen events and vicissitudes frequently occur, times must return when our forces shall be again sent forth to conquer.

Alter

P R E F A C E. iii

Alter erit tum Tiphys, et altera quæ vehet Argo,
Delectos heroas : erunt etiam altera bella,
Atque iterum ad Trojam magnus mittetur Achilles,

*If I have in any thing differed in opinion
from others, it is neither out of a spirit of
opposition, or cavilling, as, on medical
subjects, I think all prejudices ought to be
laid aside.*

PRACTICAL THOUGHTS

ON THE

PREVENTION AND CURE

OF THE

SCURVY.

AS I purpose not treating systematically on this disorder, I shall endeavour to avoid, as much as possible, repeating what others
B have

have said, further than may be absolutely necessary for elucidating the subject ; my intention being chiefly to communicate some thoughts that occurred, as I formerly had occasion to see numbers of such cases.

The earlier physicians, especially the Greeks, from the soil, air, climate, diet, and manner of living of the countries where they resided, in consequence of which this disease must so seldom or ever occur, or, where it sometimes did, often complicate with other chronic or cachectic disorders, may create some doubt
whether

whether it was at all known to them ; yet as they have described some of the* principal pathognomonic symptoms, which appear not but under a scorbutic habit, we seem to have reason to acquiesce in the opinion of Boerhaave†, Hofman‡, and many others, that it was not altogether unknown, or undescribed by them, though then not so fully, as long voyages into extreme cold countries, the chief producers of it in its less complicate appearance, were then

* Hippocrat. de intern. affect. Vand. Linden, § 34.

† Boerhaavii Aphorism. 1148.

‡ Hofman. de Scorbut. § 4.

less usual, that period of time mentioned by the poet being not yet arrived :

————— Venient annis
 Secula feris, quibus oceanus
 Vincula rerum laxet, et ingens
 Pateat tellus, Tiphysque novos
 Detegat orbes ; nec sit terris
 Ultima Thule *.

Nor do we seem to have reason to doubt that this was the same disease that appeared in Germanicus's army, mentioned by Pliny†, though not perhaps pro-

* Senec. Medea, Act. 2.

† Plin. Hist. Natural. lib. xxv. cap. 3.

ceeding from the cause he there assigns ; and as its causes must always occasionally have existed, and known not to have been propagated by infection, we seem to have reason to conclude it not to be a new disease. But as I intend not entering on a particular disquisition of this, I shall not further insist on it.

Nor shall I enter on a particular enumeration of the symptoms, as the earlier writers, who mostly had opportunity of seeing it at land, and where scorbutic symptoms were often complicate with other diseases, have many unnecessary

cessary distinctions, it being common then, as Hofman* observes, to call almost every chronic or cutaneous disorder by that name. Although we have no cause I think to doubt, but that at land it may be very often complicate with other diseases, as some of our best practical writers afford us cases of that

* Hofman. de Scorbut. § 1.

Hinc nihil in praxi medica est solennius, nihil usitatus, quam ut Cachexia, Arthritis, Dyspnœa, Paralysis, Erysipelas, Colica, Atrophia, Rheumatismus, Purpura, aliæque plures hujus generis adfectiones inter Scorbuticos numerentur.

kind,

kind ; which likewise accounts for the variety of symptoms described by different authors, ascribing the symptoms of the various diseases, with which it was complicate, as peculiar to this alone. Musgrave* gives us proofs of its complications and various appearances in our own island, and tells us that a few years before his time, it was very frequent in Cornwall, though then less so from the liberal use of cyder ; and by the symptoms he recounts, appears, and he likewise believed, to be complicate with some leprous symptoms, which disease the beginning of the fix-

* Musgrave de Arthrit. Symptom. a p. 98
ad p. 104.

teenth century, from the great quantities of fresh fish the people then eat, he says, was there almost as endemial as formerly in Judea. He likewise informs us, that the scurvy was frequent in the lower parts of Somersetsfhire, where the air is thick, and the grounds swam-py, but different from that in Cornwall, and attended with great debility of the nerves, hydropfy, gangrene, and other severe symptoms. We have likewise a remarkable case of this kind in* Boerhaave's Consultationes Medicæ.

* Consult. Med. a p. 197 ad p. 208.

But

But as this disease appears at sea, it is not nigh so various in its symptoms, though they attack not everyone in the same manner; and, as* Van Swieten observes, is much more rapid in its progress. But as the particular symptoms are already so fully described by others,

* V. Swieten. Comment. vol. iii. p. 602.

In urbibus vero obsessis, et longinquis peregrinationibus marinis, ubi penuria salubris cibi adest, et moestitia perpetua ac timor, ibi longe citius ille morbus progreditur, et omnia symptomata cito exacerbantur, brevique tempore ad summam malignitatem perveniunt.

C

I shall

I shall only at present observe, that when the disease is already apparently formed, the spunginess, fetidness, and bleeding of the gums, loosening of the teeth, broad, reddish, livid, and blackish spots on the legs and arms, with stiffness of the joints, and hard swellings of the extremities, are the principal pathognomonic symptoms. Antecedent to these are lassitude, listlessness and disinclination to labour or fatigue: but, as these appear in other cachectic and chronic diseases at land, they can serve only at sea as indications of it.

The

The above symptoms most frequently attack landſmen, or marines lately entered or impreſt, after being ſome time at ſea, or ſeamen in a very long voyage, or who have been much weakened, and their blood impoverished by previous ſickneſs, but more eſpecially in the winter, and in rainy, wet, ſtormy weather, and on cold ſtations ; at land thoſe that are in beſieged towns, where proviſions and water happen to be bad and ſcarce, or thoſe that inhabit low, ſalt, marſhy grounds, or a very cold country in the winter, and who live on hard, viſcid, groſs

food, without the benefit of fresh vegetables, and vinous liquors.

The remote causes of this disorder are apparently, and from the general consent of the most eminent writers on the subject, the visciditv, crudity, rancidity, putrescency, saltness, or muriatic acrimony of the aliments, and deprivation from fresh vegetables to correct this ; the brackishness and putrescency of the water ; the coldness and moisture of the atmosphere, as this disease principally prevails in the colder climates ; the dampness of a ship, and extreme wetness in tempestuous,

ous,

ous, stormy weather. The saline and betuminous exhalations too, existing in a sea air, may perhaps likewise somewhat contribute.

Experience and observation convince us, that, when several of the above causes are conjoined, they are productive of it, either at sea or land.

Could we prevent these inconveniencies, we should consequently prevent the disease, and not only this, but, in* Huxham's opinion,
many

* Huxham de Aere et Morb. epidem.
An. 1746.

many others which a scorbutic habit renders liable to, as putrid epidemic fevers, dysenteries, and such like. However that may be, most certain it is, that those, who are attacked under such a habit of body with these diseases, must be much more endangered, and the cure prove much more difficult.

Let us then consider the provisions how far these causes exist in

Non solum miseris his, at vere utilibus hominibus, per se infesta est maxime scorbutica lues, sed et illos etiam omni pene morbo qui ab humorum corruptione pendet, obnoxios admodum reddit; febribus nempe putridis, malignis, petechialibus, pessimo variolarum generi, dysenteriae cruentae, hæmorrhagiis, &c.

them,

them, how they might be corrected or changed at the most moderate expence, likewise what some have already discovered, or proposed, and how these may with more ease be put in execution.

The provisions then are salt beef and pork, flour pudding with raisins or suet, boiled pease, biscuit of a very viscid and glutinous quality: For drink, small beer, by the motion of the ship generally very thick and turbid; or where beer falls short, or cannot be procured, English spirits half a pint; in wine countries, wine a pint; in
the

the West Indies, rum half a pint ; in the East Indies, arrack the same quantity. I shall more fully enlarge on the diet and prevention, for, as Dr. Mead* justly observes, it is much easier prevented, than, after it has once taken root, drove out by medicines. The salt beef and pork then can little otherwise be altered, than by due care taken in the watering and freshening them.

When in a harbour or a road, fresh meat is allowed ; but then this fresh meat alone seems not sufficient to carry off the scorbutic tendency, which in seafaring peo-

* Mead *Monita et Præcept. Med.*

ple, from living so long on salt provisions, is so apt to produce this disease, after sometimes being only a short time at sea. In Lord Anson's voyage we are informed, that the people who had been scorbutic, though living afterwards on fresh provisions at sea, relapsed : we have reason then to believe, the scorbutic taint had not been entirely removed, or if they had had likewise fresh vegetables when at sea, this would not have happened. Hofman * tells us, this

* Hofman de Scorbuto. cap. I. §. xxxi.

Et primo quidem in genere notare licet, scorbutum ex iis esse adfectionibus, quæ nec

D

subito

this disease neither suddenly attacks any person, and is as slowly and difficultly removed, and on the smallest error of diet is apt to recur. Every opportunity then ought to be embraced, to provide a ship's company with fresh vegetables, to remove this tendency and preserve them healthy. We have no cause to doubt that fresh animal food† is greatly assistant

subito ægrum invadunt, nec subito eum deferunt, sed testudineo quasi gradu procedentes, admitigationem æque ac curationem multo tempore exactaque victus ratione opus habent : unde etiam fit, ut noster adfectus, si vel levis error committitur, facile recrudescat.

* V. Swieten. Comment. § 150. p. 597.

in

in the cure of it; but that it is not always of itself sufficient to remove it, though even assisted by the benefit of land air, the practice of those to whom it has often occurred, both in armies and in private, sufficiently evinces.

They should not only then, in a harbour or road, have plenty of these vegetables along with their fresh meat, but large quantities of them should likewise be cut up and boiled amongst their water gruel, as it appears from observation this disease is a great deal owing to the want of them.

D 2

But

But though furnishing a ship's company with fresh vegetables, may be so necessary, and in the army* and encampments, where there is much less occasion for them, is always observed; yet as this may seem attended with considerable expence, I shall endeavour to consider how this may be done at the least; and which perhaps may be found not so great, as at first appearance. A sufficient quantity for four men would not cost above a penny; so that the expence would be but inconsiderable for each person. Yet, as nigh sea-ports, where there are such num-

* See Pringle's diseases of the army, p. 113.
bers

bers of ships, there may be difficulty at all times to procure such large quantities, was the government to purchase a large piece of ground, nigh each dock yard, or principal road-head, after the first expence of the purchase, the other charges might be made very easy, as men might be sent from the marines, or ships in the road or harbour, as labourers ; and in time of peace, when this might be less necessary, the ground could be let out, or applied to other uses. Round this might likewise be planted spruce or apple trees, or such like.

If

If, either by contracting for supplies of them, or the above method, the charge might still seem too great, as seafaring people have generally such inclination and desire for them, nature seeming to point out to them what was most salutary, was a halfpenny per day deducted from their pay to defray it, or a small part of the prize money in war time, which on calculation might be found equivalent, I may venture to say they would readily agree to it, and which would be more than sufficient, in any part of the world, they might happen to be stationed in, to defray it. But this, and
further

further methods propofed, I only mention ; fubmitting them to the fuperior judgment of thofe who have the executive power, and to whom this properly pertains.

The next principal article is the bread. Bifcuit, as before faid, of a very vifcid and glutinous quality ; and when broke, appears in the middle entirely what they call flinty. This I think might eafily be remedied, by having the bread baked in the manner of the Spanifh or Portuguefe bifcuit or rusk, which is both lighter , better fired, and contains nothing nigh the vifcidity of the common bifcuit
now

now in use. If it should be objected that it will not keep so well, nor so long at sea, which I know not but it will, though I pretend not to judge, as I have not had opportunity to be informed ; but if it should be so, then one half of the bread might be of this sort, and the other half of the other ; and this I imagine would be attended with no more expence than the present.

The butter and cheese are the next articles of the victualling. The butter, to preserve it any time, must be loaded with a large quantity of salt, and even then very
often

often becomes so bad as to be condemned as useless and unserviceable. The cheese* the same, which is known to be particularly hurtful in this disorder.

To remedy this, there should very little of either be put on board. Oil, which I apprehend would be attended with as little expence to the government, espe-

* V. Swieten Comment. § 1150. p. 598.

Et cum plerumque multo sale condire soleant caseos diu servandos, patet facile, quare illorum usus noceat illis, qui ad scorbutum inclinant alias etiam ob causas; imo quotidianis observatis constat, scorbuticos omnium symptomatum augmentum percipere simulac per paucos tantum dies tali caseo utuntur.

E

cially

cially considering the great quantities of the others, that are so often obliged to be thrown away, as become putrid and unserviceable, might, if with very nigh the same expence it can be procured, be substituted in their place ; but more especially on the colder stations, and for channel service, particularly in the winter, or where the people are to be long without fresh provisions.

The other articles are the pease and oatmeal : the pease contain a remarkable visciduity. In place of these, therefore, rice should be substituted ; not that I believe any specific

specific antiscorbutic virtue to exist in it, but that it contains nothing of the viscosity of the pease, is less flatulent, and rather of easier digestion ; and would, I suppose, be very nigh as little chargeable, if not entirely so ; at least one half quantity of rice might be placed for the half quantity of pease. This might be rendered a very proper and useful diet, both for prevention and cure of the scurvy, if, when boiled, it was to be eat with sugar, vinegar and oil, which would by no means be so unpalatable, especially to seamen confined to salt provisions. This is a light laxative acid antiseptic food,
and

and entirely vegetable, every way adapted to resist the growth of this disease; and in some measure resembles in taste and quality those acid summer fruits which have always been found so particularly serviceable in this disorder. The oil added will render it more nourishing, and better help to keep up their strength. Here I cannot omit observing, that rice used to be eat thus medicinally by the Greeks, as appear from *Ægineta**,
and

* Εψεται δε ἡ πλίσσανή, γένος μερὸς αὕτη
βαλλομένη πρὸς πεντεκαίδεκα ὕδατος, ἐλαίῳ
μιγνυμένην συμέτρου μετα δε τό ἀνοιδῆσαι καὶ
ξύ.

Ægineta

and was in common use amongst the Romans, as appears from Horace*.

Some years ago I remember a ship's company in the Mediterranean, who for almost a year and a half, had nothing but salt provisions, and these too of a very bad quality. The contrivance the people used to furnish out a fresh meal, was by breaking and soaking their bread in water, then

Ægineta loquens de Oryza. Porro ptisanæ in hunc modum coquitur: uni ejus parti, aquæ quindecim et olei momentum adjiciuntur, ubi ebullierunt acetum quoque addes. Lib. i. cap. 78.

* Horat. lib. ii. sat. 3. v. 155.

pressing

preffing it out, and pouring on it some oil and vinegar, fprinkling it with a little falt to render it more palatable, and mixing all up like a fallad. This ufed to be a frequent difh once or twice a day; the confequence was, that during all that time there was not one fcorbutic cafe, although there were a number of fevers, and various other diforders.

When oil is ferved to a fhip's company, which is commonly done on very long voyages, when the butter and cheefe are all ufed ; as a fufficient quantity to laft fo long a time would not keep undamaged,

maged, or in foreign countries, many of the men then, either those that have been bred in the coasting trade, or new raised, have a prejudice against it, as what they have not been accustomed to. Here some care should be taken to remove this prejudice, as nothing can conduce more to preserve them healthy, than by eating it with vinegar along with some other of their provisions. In Italy, Spain, and the other countries where it is produced, we know the people use it the same as we do butter; and which for the purpose we now want it seems rather preferable.

The

The next thing to be considered, is the small beer, as before said, generally very thick and turbid; and as great part of it is commonly brewed in sea ports, in many of which the water is remarkably brackish, and from which the inhabitants, particularly those of a more sedentary life, have generally a natural tendency to a scorbutic habit, and this beer too, as is known, often very carelessly made, so as presently sometimes to become quite fetid and stinking, it must appear evident, and is confirmed by the observation

servations of others*, how greatly this contributes to the increase and production of this disease. Great care then should certainly be taken in this particular, where the health of so many people is concerned ; not only that the beer be well made, and that likewise the water, of which it is brewed, be all brought from some fresh

* Hofman. de Scorbuto, Thes. Therapeut.
§ iv.

Quare aquæ potius puræ, leves, nec falsedine nec calcario terrestri elemento imbutæ, in quibus facile cibi coquuntur, ad potum debent eligi, et ex his cerevisiæ coqui. Dicit enim vix potest, quantum in locis septentrionem spectantibus, noceant cerevisiæ, ex insalubribus aquis confectæ, nec satis coctæ.

F

river

river or spring, at some distance from the sea, where it is to be found entirely soft; as likewise should the water for the use of the ship.

Spruce beer is the common drink of the people in North America, and ships in a harbour are there supplied with it. This is made of a decoction of the black spruce, a kind of pine, fermented with melasses. Decoctions of the pine have long been celebrated as greatly serviceable in this disease; and this spruce beer is certainly of a mild saponaceous, detergent and somewhat strengthening quality, and
used.

used for any length of time might probably be found serviceable in this disorder, as well as in obstinate chronic rheumatisms, with which those who have long used the sea are sometimes so severely afflicted. Melasses is a cheap article, and a quantity of spruce would grow very well in this climate; and supplying ships in a harbour with it, or for a short time at sea, would be less expensive than the beer now used: but those who have the direction of these things can best judge.

The

The leaves and tops of the *Abies* mas *Theophrasti*, or *Abies rubra**, which is the common pitch tree, and from which tar and the Strasbourg turpentine is likewise got, have been much used for diet drinks in the scurvy, for which they are highly commended by the inhabitants of the Northern countries; and it is said, a good quantity of them are put in Brunswick mum. As the leaves and tops are easily procured, they might be boiled in the water before it is made into beer.

* Miller's *Botanicum Officinale*, p. 2.

Next

Next is the water, whose putref-
 cency greatly contributes to this
 disorder. Vegetius* observes, that
 in an army, nothing is more per-
 nicious and destructive than bad
 water ; but it must be still more
 so in a fleet where they are de-
 prived of fresh vegetables and the
 benefit of the land air.

The goodness of it then depends
 on its lightness and softness, as
 above mentioned, brought from a
 fresh river or spring, free from any

* Vegetius de re militari, lib. 3. cap. ii.

Nec perniciosus, nec paludosis aquis utatur
 exercitus, nam malæ aquæ potus, veneno
 similis, pestilentiam bibentibus generat.

brackishness. Due care should likewise be taken in frequent washing out of the casks before they are filled ; as it is a custom at sea to fill them, as any number are drunk out, with salt water, to keep the ship in trim or due balance, which continuing any time in them, is apt to form a saline crust on their sides, and requires frequent washings to dissolve; and if carelessly done, must necessarily give a brackishness to the water.

Its putrescency by long keeping is likewise greatly prejudicial. Water, tho' fetid, by standing any time in an open skuttle cask exposed

posed to the air, will indeed become sweet ; but before this can happen, it is generally all drunk out.

The late ingenious Dr. Stephen Hales* has proposed, with his small box-ventilators, ventilating the surface of the water to, sweeten it. But as this takes up a considerable time, it is more speedily and effectually done, by causing the air pass entirely through the body of the water. I shall endeavour to shew how I think this may, with least trouble, be put in execution. There should be a copper

* Hales on Ventilators.

pipe of five feet and a half long, in diameter about an inch and a quarter, whose lower end is joined to a circular flat box of the same metal, about two inches and a half deep, whose upper surface is made full of holes, and with a ledge opens and shuts upon the lower part, for the convenience of cleansing it. The upper end of the pipe should be made to bend sloping, to receive the nose of a small box-ventilator, or of a large pair of bellows, such as are used for forges. When this metal pipe and box are plunged into a butt, into which the water has been started, the diameter of the box being made

made nigh equal to the diameter of the end of the butt ; or it may be made square to enter the skuttle of a skuttle cask. The bellows or ventilator then being applied to the upper end of the pipe and worked, the air, passing through it, finds no resistance till it comes to the lower part of the box ; where being stopped, it passes up the holes on its upper part, through the whole cask of water up to its surface ; and by thus working the bellows or ventilator, for about a quarter of an hour, though the water stunk never so offensively, it becomes entirely sweet. As the sweetening of wa-

G

ter

ter, when become fetid, is a thing of such importance to the health of a ship's company, and may be done with so little trouble and expence, it should certainly, by no means, ever be neglected.

When the men are served with spirits instead of beer, the mixing them with a triple quantity of water is, certainly, a very salutary and useful precaution: but this might be still more improved by making it into weak punch, putting four parts of water to the spirit, and acidulating it with vinegar. The ship's vinegar is generally very good, and by no means an ungrateful acid,

acid, much preferable to either the spirit of vitriol or cream of tartar, sometimes used by the officers when in want of lemons. It is a much lighter and more agreeable acid than the spirit of vitriol; and cream of tartar is only a vinegar in a solid form, and requires much trouble in dissolving. This, upon trial, will be found no ways disagreeable, though never thought of at land, where lemons may almost always be had; but by cutting a very few in slices, and putting them into a cask of vinegar, adding a small quantity of spirit to preserve it, would suffice for fouring for a whole voyage; and if
the

the vinegar is good in flavour, would be found little inferior to the real lemon juice.

Water acidulated with vinegar, we know was the drink of the Roman armies ; they in this manner correcting its bad quality, and preventing putrid disorders ; and this perhaps was one reason why this disease was so little known amongst them. Baron Van Swieten*, in his diseases of the army, confi-

* *Maladies dans les Armées* Scorb. p. 149.

La premiere chose est de corriger l'impurité des eaux ; l'ong parviendra en melant dans chaque pot d'eau, deux onces de vinaigre, et deux onces d'eau de vie.

ders

ders this as a very material article in the scurvy, and directs mixing spirits and vinegar with the water. The adding a little common sugar would be but a trifle of expence, and which, to prevent this disease, would be a very great improvement; for tho' sugar, too much used, might here be prejudicial, yet the moderate use of it, as it is of a saponaceous quality, renders the drink more miscible with the blood, and therefore allays thirst more powerfully, and more effectually dilutes viscidities; and when by art combined with acids, more imitates the juices of subacid horæaceous fruits, found so remarkably

markably serviceable in giving relief in this disease. But I must here observe, in regard to English spirits, that, with a little trouble and small expence, they might be much improved.

In the West Indies, the rum they want soon to ripen for their own use, they commonly put into a porter cask; or if they chance not to have one, they add a little porter (about a pint to a cask of rum) and some maize or Indian corn, with sometimes a banana; and I have been informed by those who have been bred in the distilling way, that it is some-

sometimes a practice, with some of the trade here, to add a few baked prunes to a cask of English spirits; which, after keeping some time, so much improves it, that they often sell it as French brandy. Some such method to dissipate the the noxious effluvia or empereuma, contracted by the still, seems here much wanted, as these new spirits are known to be so particularly hurtful. As to guarding against the coldness of the atmosphere, that can only be done by dry warm cloathing, which care should be taken that they are properly furnished with; and in the navy, their cloaths should be often examined,

amined, as they do in the army, that they don't sell them.

The dampness of the ship might sometimes be corrected by having small German stoves betwixt decks.

In the winter, and on the colder stations, the allowing the people mustard to eat along with vinegar, with their salt beef and pork, might be greatly serviceable; as likewise plentiful diluting, to dissolve and wash away the muriatic salts in the blood, using at the same time moderate exercise. And here I cannot omit observing of
how

how great consequence the watering of the meat is. Its a common prejudice amongst seafaring people, that salt water will dissolve salt and freshen meat better than fresh water, which is entirely a mistake, since water is capable of dissolving only a certian portion of salt, and the more it already contains, the more slowly and difficultly will it dissolve any more that is put into it. The meat then, before it is put to steep, should be well washed and cleansed from the rough salt, and while in steep, can never be too oft shifted; and if there is a large quantity of it, it should be put in different casks.

H

Having

Having thus treated on the diet, I shall consider what probability of success there is from medicines; but as the cure, as well as prevention, seems to consist chiefly in diet and regimen, I must acknowledge my diffidence of any good effects from them, without the former, which of itself will remove this disorder; for, as Hofman* justly observes, there can be

*Hofman de Scorbut. Thes. Therapeut. § 1.

Ita quoque vix melior scorbutum, tum præservandi tum curandi datur methodus, quam quæ removendis ejus causis est dicata.

Ibidem. Per se patet, ante omnia diætam rite instituendam, si causas scorbuti subtrahere velimus.

no properer cure for it, than by a diet properly adapted to remove its causes.

This disease has been divided into the hot or alkalescent, the cold or acid, which perhaps may be owing to the different climates, or seasons, in which it was observed, or to the different constitutions of the patients; as in the warmer countries, or in the summer, the milder horæaceous fruits have been observed to be more beneficial; while in the winter, and in very cold climates, the warmer alkalescent plants have been found a cure for it.

Boerhaave

Boerhaave too supposes, that the scurvy sometimes proceeds from acidities: but although in cachectic disorders, and where it is complicated with other diseases, this may sometimes happen, yet I am entirely of Sir John Pringle's opinion, that although in the primæ viæ there may sometimes exist acidities, yet this is never the cause of the real scurvy.

I shall here transcribe the whole passage*. 'It will appear that in
' all these papers, I have considered the scurvy as arising from

* Pringle's Observations on the Diseases of the Army, p. 410.

‘ a putrid cause only, without ex-
 ‘ cepting the muriatic species; be-
 ‘ cause salted meats (which are half
 ‘ putrid) with too little or corrupted
 ‘ water, concurring with the viti-
 ‘ ated air in unventilated ships at
 ‘ sea, are also productive of putre-
 ‘ faction. Among other causes of
 ‘ that distemper, one is said to be
 ‘ an acid; a cause so opposite to the
 ‘ former, that though the symp-
 ‘ toms, enumerated by some writers,
 ‘ had been more alike, it were to be
 ‘ wished, that, to avoid confusion,
 ‘ this supposed species had not been
 ‘ called a scurvy : and the rather, as
 ‘ I apprehend, that in the countries
 ‘ most liable to the true scurvy, an
 ‘ acid

‘ acid is so rarely to be blamed*,
 ‘ that perhaps we should not have
 ‘ heard of it at all in this class of
 ‘ diseases, had it not been for the
 ‘ established virtues of the raphanus
 ‘ rusticanus, cochlearia, and the
 ‘ like plants in the cure. For as all

‘ * Unless in the primæ viæ ; to which acidity, those of a scorbutic habit may be the more subject, on account of the relaxation of the stomach (see p. 397, 398.) and the higher fermentation of the aliment therein, arising from the corrupted nature of the saliva and gastric humours : see p. 365, 377. But it does not appear that much of this acid enters the lacteals ; or if it does, that it is able wholly to subdue the putrefaction of the humours in the true scurvy.’

‘ these

' these came to be reputed of an al-
 ' kaline or putrefying nature, an acid
 ' species of scurvy seems to have
 ' been fallen upon, to account for
 ' their efficacy. But from the ex-
 ' periments laid before the society,
 ' it appears that these vegetables
 ' are real antiseptics, and there-
 ' fore possessed of qualities different
 ' from what some celebrated au-
 ' thors were induced to think, by
 ' considering their alkaline parts
 ' as septic, and believing their reso-
 ' lution tended to putrefaction only,
 ' and never to fermentation.'

The proximate cause then of
 this disease seems to be a viscosity
 of

of the humours becoming putrid on account of their infarcting the vessels, or stagnating in the capillaries, joined to a muriatic acrimony, more especially at sea. Bleeding has seldom been found serviceable in this disorder, and I think as seldom ought to be attempted ; not only as the patients rarely find relief from it, but as their diet and air continues the same, the blood, generated in place of that taken away, must be rather worse than the first ; so that unless some very inflammatory symptoms or disease should be complicated with it, it ought always to be omitted. Practitioners at sea,

sea, therefore, ought not to be too free in bleeding, on every ephemer, or slight inflammatory symptom : even when fevers are epidemical in a fleet, they are generally of the low and putrid kind, and though the symptoms seem sometimes pretty inflammatory, yet they will often hardly bear it even in a small quantity,

In the beginning of this disease then, as well as in slight inflammatory symptoms, there seem no medicines more adapted to answer the intention, than the saline draughts made of the ships vinegar and salt of tartar : this is aperient

rient and detergent, and powerfully resolves viscidities of the blood, infarctions of the vessels or stagnations ; and Huxham* observes, is even more penetrating than when made with lemon juice, on account of the great quantity of mucilage the lemons contain ; and as an antiphlogistic is certainly preferable to nitre ; both on account that it is milder, as well as more grateful to the stomach : we find

* Huxham. comment. de morb. icter. const. an. 1737.

Profecto lixivium ex sale tartari et aceto penetrantius est multo, quam ex eodem cum succo limonum, ob mucilaginis copiam quæ limonibus inest.

too from Pliny* this was used by the ancients in disorders of the spleen, from whence this disease was believed to proceed. In scorbutic cases ʒv. or ʒvi. of the vinegar should be put to a ʒi. of the salt of tartar; but according to the strength of the vinegar, so that the acid may predominate, diluted with ʒiss. of water, and sweetened with a ʒi. of sugar; this may be given twice or thrice a day, and 20 or 30 drops of the tincture of myrrh may likewise

* Plin. Hist. Natural. lib. 23. Proem.

Dantur et bibendum cinerem sarmentorum ad lienis remedium aceto conspersum ita ut bini cyathi in tepida aqua bibantur.

some-

sometimes be added to each draught, to answer the same intention, and more powerfully to resist the putrescency of the humours. The same quantity of tinct. serpent. may sometimes be used in place of the myrrh.

Infusions of the dried vulnerary herbs, such as *betonica**, *scabiosa*, *agrimony*, *folia cynosbatis*, *heder. terrest.* *hypericum*, or the like may be given afterwards.

The diet should be rice steeped in water, with a fourth part vinegar, till it becomes quite soft and

* Vide Wepfer. de Thea. Helvet.

swelled,

swelled, then boiled into a ptisan or gruel, and sweetened with sugar; a little cinnamon in powder, or any other mild aromatic may be added, with some oil or butter, well washed and freshened to render it more nourishing.

Portable soup, as it is allowed in the navy, should be given once a day, to keep up their strength, but always gently acidulated with vinegar; as likewise when given to people recovering from fevers, or otherwise it will be apt, where there is a putrid scorbutic tendency, to encrease it; and which at sea generally happens on the
blood

blood being impoverished by a fit of sickness.

By persisting in this gentle method and diet, after sometimes giving the draughts but once a day, or as the patient's symptoms may indicate, this disease, if not carried off entirely, which can hardly be expected at sea, until the patient has the opportunity of enjoying the land air and fresh vegetables, yet may be so mitigated and prevented from encreasing, so as to preserve life till there is that opportunity.

Amongst

Amongst the various preventatives that have been recommended for this distemper, one of the most considerable is vinegar ; and as it so nearly resembles the lemon juice, which frequent experience has proved so often effectual in this disorder, it seems necessary to inquire into the real cause, why, tho' king's ships are so liberally supplied with it, it often proves of so little efficacy.

It indeed differs from the recent juices of acid vegetables, in that it is fermented, and so must be less saponaceous; but vinous fermented liquors, experience has likewise proved

proved very powerful remedies in this disease; and as to the saponaceous quality, a small quantity of sugar added will restore it.

So far as I have observed, the real cause is, that it is much less used by the people than may be imagined.

As before observed, those most subject to this disease, are landmen new raised, after being sometime at sea. These poor people, on coming on board, are generally almost destitute of every thing; and the table furniture, provided them by the purser, consists only of

of a wooden can, a wooden bowl and platter, with a few wooden spoons for each mess, consisting of three, four, or sometimes more persons ; so that when vinegar is served to a ship's company, which is commonly once a month, or fortnight, these having nothing to put it in, are obliged to go without it ; and in most ships, at first fitting out, the greatest part of their complement consists of such people.

The sailors likewise in general, when in health, are so thoughtless and careless, that, as they consider this not as an article of diet, and

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as

as it tends nothing to intoxicate them, they are much less careful in coming to receive it, and preserve it, than they ought to be.

The people on board of ships of war, when fitted out, should be provided more amply with some of these little necessaries. Though this may appear but trifling, yet is, in fact, a thing of not such inconsiderable consequence to their health. As for example, when wine or spirituous liquors are served to a ship's company, many of the men therefore, even the soberer part of them, having sometimes nothing to con-
tain

tain it, or perhaps only a wooden can, which by the motion of the ship is so liable to be overfet, most commonly drink it immediately ; which, if preserved till some other time, or until they went on their night watch, might be much more beneficial to them ; so, when ships were so judiciously ordered to be supplied with vinegar, the people having often nothing to contain it, the good effects of the intention were in a great measure frustrated.

When they happen to be taken sick, this too is often a great inconvenience, as they have nothing to
hold

hold their drink, which, in fevers, and other inflammatory disorders, may, for want of proper diluting, often be attended with fatal consequences. If they were then provided with tin cantins, as the army sometimes are, this would be of great convenience on board, as well as when they went on duty in boats; and if not found at the purser's expence, might be charged them in the article of flops.

But it seems necessary, when a scorbutic taint begins to prevail in a ship's company, as the people are sometimes too remiss in using vinegar, that some method should
be

be fallen upon to mix it with part of their food.

The giving them rice in place of pease, as before mentioned, would answer this intention, by acidulating it before it is served them, and sweetening it a little.

Many of the people in Holland, who, from the moistness of their air and soil, have almost always a scorbutic tendency, make very frequent use of sour dishes.

We are informed in Lord Anson's voyage, that tar water was found serviceable in this disorder,
and

and I think no ways improbable ; but if it was made with about a fourth part of vinegar, and sweetened a little, I believe it would prove much more effectual, and might be given to the quantity of about ʒiii. or ʒiv. twice a day.

I have often at sea given an oxymel of it for coughs, and likewise the ox. ex allio ; both which I have found powerful medicines, with giving opiates at bed-time.

It has been judged that the Peruvian bark, as it has been found of such virtue, in remedying those putrid fevers that occur sometimes in
hot

hot and very moist places in some parts of the coast of Africa, might be serviceable in scurvy, as they are attended with signs of putrefaction.

But if the difference of the two diseases be considered, the one attended with a fever, and which in those hot countries has commonly at first more or less of intermission or remission, and the putrefaction instantaneous, arising from an epidemical contagion, whereas the other is chronic, and the putrid symptoms advance gradually without any fever, the analogy

logy betwixt them will appear but very small.

I indeed believe that it may perhaps, sometimes, be of service (when prudently exhibited in very small quantities) by its strengthening quality, in protracting the progress of this disease, when the body has been before debilitated by sickness; but that it can eradicate a scorbutic taint, I can no ways think; and where it sometimes may have appeared to cure this disease, must have been owing to change of diet, air, or other circumstances.

The

The earth found on the coast of Norway, said to remedy this disorder, as all earths are absorbent, where this disease is complicate with cachectic symptoms, and where acidities may greatly abound in the primæ viæ, it may in such case give some relief, or if it is joined, with chalybeate or bituminous principles, may perhaps sometimes be serviceable; but that any earthy substance is capable to eradicate a truly scorbutic habit, I must acknowledge my entire diffidence: and as to specifics in general, I must acknowledge the same: nor do I think any good effects can in this disease be produced by

L strong

strong medicines of any kind, but, as Hofman* observes, by the most gentle and simple ; and at sea under some circumstances, as when the people have been much debilitated by previous sickness, the voyage very long, and the ship extremely wet, cold, and damp for a long time together, from the continuance of cold wet stormy weather, if the patients are become very low, it will be a difficult

* Hofman. de Scorbuto. § xxxiv.

Plerumque enim heroica adhibent medicamina; cum instar regulæ generalioris scire liceat, scorbutum inter chronicos facile gravissimum non validis et fortioribus, sed lenissimis et simplicissimis tractandum esse remediis.

matter

matter with any medicines, or any regimen or diet, that can there be observed, even so to palliate it, as to preserve life till they can be got on shore, or to the end of the voyage, when they may be freed from some of these inconveniences.

When this disease occurs on shore, where doubtless it frequently does, and where too I think we have no cause to doubt may be oft complicate with other symptoms, a dry inland air, with a dry sandy or gravelly soil, with moderate exercise, and the esculent and succulent fruits and herbs
used

used in food, and the common antiscorbutic herbs or their juices, as medicine, with butter-milk, whey, and decoctions of grasse roots, will speedily remove it; proper attention being paid to any other symptoms that may happen to be concomitant.

Your esculent pot herbs, whether at sea or land, ought always to be boiled moderately in pure water by themselves, and not with animal food, which deprives them of much of their vegetable sweetness. Dioscorides* and Ægineta† have long ago observed, that being

* Dioscorides, lib. ii. cap. 146.

† Ægineta, lib. i. cap. 74.

much

much boiled, they loose their aperient and laxative quality.

Hofman† greatly extolls the use of mineral waters in this disorder; and these of various kinds, as being impregnated with saline or chalybeate principles, are more active than common water in passing the small capillaries, and so have greater energy in removing obstructions.

Our Bath and many other of our mineral waters may be here serviceable.

† Hofman. de Scorbut. Thes. Therapeut.
§ viii.

* Tum

Tum medici latices, quales Bathonia fundit,
 * * * * *

Ventriculo mire gratae, tortoque canali,
 Depurant pariter succos, et viscera mundant.*

But in the using acidulated waters, there is some precaution to be observed by those that are advanced in years, as Wepfer† relates instances of apoplexies produced by them.

Hofman‡ also recommends in scurvies the use of these mineral waters with milk. When the acidulated waters are thus used, a small quantity of sugar should certainly

* Fleming Neuropathia, p. 61.

† Wepfer hist. apoplesticor. observ. 78.

‡ Hofman. de connubio aquar. cum lacte, ib.

be added, to make a more intimate union, and prevent their coagulating or curdling on the stomach.

Milk might probably be rendered very powerfully medicinal, both in scurvies, phthisis's, obstructions of the viscera, and even of the glands, and in several chronic disorders, by combining it with the saline draughts ; and where it might be thought sometimes too refrigerating, a small quantity of aromatic tincture, or tincture of cardamoms, might be added, and sweetened.

Hofman* tells us, in maniacal cases, with a scruple of nitre, given

* Hofman. de conubio aquar. cum lacte, § 19.
in

in a cup of milk with tea or coffee daily for upwards of two months, he has made a perfect cure. If in this disease, this neutral salt can produce such effects, where there are such violent visceral obstructions, or where the mininges of the brain are thickened, or the vessels obstructed ; what may we not expect from the like, in other obstructions in general : but as nitre is composed of a very acrid mineral acid, joined to an alkaline base, we seem to have much greater reason to expect more powerful effects from a vegetable acid, joined to the same base, as it seems every way more grateful
to

to the stomach and intestines ; likewise more saponaceous and detergent : such a neutral salt as this, may be taken safely to a considerable quantity so as to purge ; or manna or such like mild cathartic may be occasionally added. Tho' the use of it in small quantities, for a continuance, seems to promise the fairest in removing obstinate obstructions, where other more powerful remedies may not always be so safe, nor prove so efficacious. As to its diuretic quality, that in small quantities will not be found so considerable ; but detergent diuretics, whether Galenical or saline,

M

we

we find are, and have ever been reckoned amongst the principal deobstruents: the saline too are most powerful diffolvents of viscidities, and remarkably antiplogistic, as well as antiseptic. Boerhaave* declares the kidneys are the best depuratory of the blood, because the thicker parts of it may pass through them: and even in violent diseases, by properly attending to all the symptoms, a favourable crisis is oft procured, without much disordering the body.

* Boerhaave de viribus medicament. diuret. coral. iv.

In some gouty cases too, thus combined with milk, but so that the alkali predominates, we have some reason, I think, to expect good effects.

F I N I S.

E R R A T A.

- Page 13, line 2, for betuminous, read *bituminous*.
 27, l. 3, read *nothing nigh the viscosity*.
 33, l. 8, instead of, and that, read *but that*.
 45, l. 13, instead of, and therefore, read
 therefore.
 66, l. 15, instead of therefore, read *then*.

1873
The first of the year was a very
cold one, and the weather was
very disagreeable. The snow
was very deep, and the wind
was very strong. The people
were very much distressed,
and the cattle were very
suffering. The people were
very much distressed, and the
cattle were very suffering.

The second of the year was a
very warm one, and the weather
was very pleasant. The snow
was very deep, and the wind
was very strong. The people
were very much distressed,
and the cattle were very
suffering. The people were
very much distressed, and the
cattle were very suffering.